UNIVERSITÄT KOBLENZ · LANDAU

Institut für Wirtschaftsinformatik
Fachbereich Informatik
Universität Koblenz-Landau

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A FRAMEWORK TO SUPPORT THE ANALYSIS OF STRATEGIC OPTIONS FOR ELECTRONIC COMMERCE

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Abstract

In this working paper, we present an approach to support companies – especially small and medium sized companies (SME) – with the strategic analysis of their current situation and the future options offered by Electronic Commerce. The approach provides a set of specialized concepts that help with structuring the overall problem domain. They are inspired by well known instruments for strategic analysis, such as value chain analysis, SWOT analysis and balanced score cards. The work presented in this paper is part of the project 'ECOMOD', which is funded by the German Research Foundation (DFG).

1 Introduction

Taking advantage of the potential offered by Electronic Commerce (E-Commerce) requires a thorough analysis of a company's current situation and its future options. Many companies, especially small and medium sized companies (SME), are hardly capable of managing this challenge without effective support. This is for various reasons. There is lack of knowledge about sophisticated concepts for strategic planning. Also, there is lack of specialized knowledge about information technology: Planning for E-Commerce requires substantial knowledge about analysing and designing information systems as well as about a plethora of systems and standards that are promising to support efficient ways to initiate and process business transactions through the Internet. Last but not least, there is lack of time and resources. Against this background, ECOMOD, a project funded by the German National Research Foundation (DFG) is aimed at developing a method, E-MEMO, that allows for an efficient and sophisticated support of companies that intend to develop a versatile infrastructure for E-Commerce. In this paper, we focus on an early stage of this process: strategic analysis is aimed at analysing the current situation of a company with respect to opportunities offered by E-Commerce. In order to make clear how strategic analysis and design are integrated in the overall process, we will first describe how the various components of E-MEMO are interrelated.

2 Components of E-MEMO

The method developed within ECOMOD, called E-MEMO, is based on an already existing method for multi-perspective enterprise modelling, MEMO ([Fran97], [Fran03]). MEMO serves to analyse and design corporate information systems that are balanced with a company's strategy and its organization. For this purpose, it allows for structuring and describing a company from various perspectives, such as an information system perspective, a strategic perspective or an organisation perspective. E-MEMO provides four main components:

1. A set of *modelling languages* that support the description of a company from different perspectives and with respect to various analysis and design purposes. The languages come with graphical notations that are intended to provide illustrative representations of a firm. MEMO Organisation Modelling Language (MEMO-OrgML) is a language that fosters the description of a company's organisation, such as business processes or organisation struc-

ture. It also includes concepts that allow for modelling resources, e. g. information technology in general, software in particular, machines, or human resources. In case there is software to be developed, MEMO Object Modelling Language (MEMO-OML) supports the design of object models that are tightly integrated with models of business processes or workflows. Since MEMO-OML is similar to the UML, it could also be replaced by that. MEMO Strategy Modelling Language (MEMO-SML) provides concepts to describe and analyse corporate strategies.

2. The availability of a modelling language alone does not tell how to proceed with a particular project, which would be – in the case of ECOMOD – a project to introduce an appropriate infrastructure for E-Commerce. Therefore, E-MEMO also contains a *process model* that describes generic stages of projects of that kind. Each stage is associated with tasks, goals, participants etc.

3. Using the Internet for doing business can involve radical changes, which will usually require tremendous efforts to design and implement the new business model. However, from an economic point of view, going to extremes is not always advisable. Instead, it will often be a better choice to start with more modest goals, such as partially introducing electronic procurement. Nevertheless, a company should have a long term plan of how to proceed with its E-Commerce activities. Otherwise, investments in short time initiatives can hardly be protected. For this purpose, E-MEMO provides an *evolutionary model* of E-Commerce, which contains prototypical stages of a long term development of E-Commerce.

4. Modelling languages and accompanying process models help with the systematic analysis and design of powerful E-Commerce systems. However, the remaining work will often be too much of a challenge for many companies, especially for SMEs. Therefore, E-MEMO provides 'blueprints' for analysis and design. They include a specialized approach to strategic analysis for E-Commerce, which is presented in this report, a set of generic strategies together with several refinements (see [FrLa04]), and a library of business process models (see [FJK04]).

Figure 1 illustrates how these four components are interrelated.

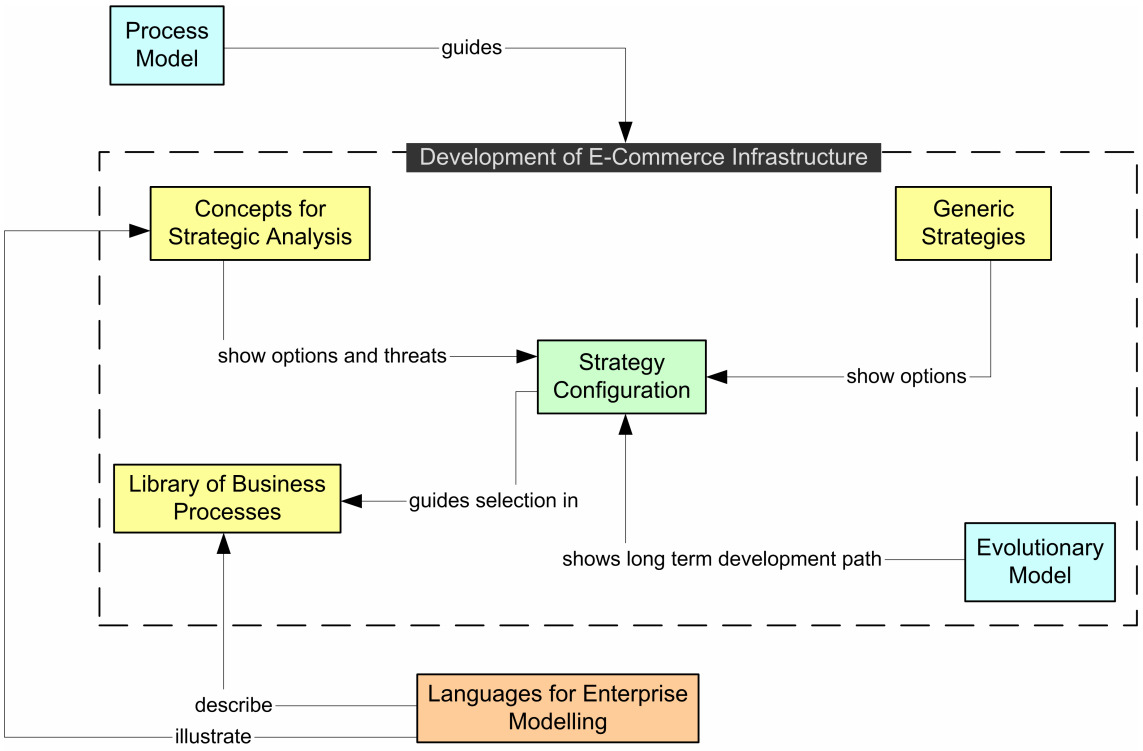

Figure 1: Components of E-MEMO

2.1 Macro Perspective: E-Commerce as an Evolutionary Process

To become serious E-Commerce contenders, managers should understand the potential of the Internet. A solid understanding requires a substantial idea of what is possible in the long run – with respect to economic, organisational and technological changes to come. At the same time, investments into E-Commerce recommend a long term perspective. Only then you are able to prepare for future development step with today's investments – and only then you are able to protect these investments. The long term development of doing business over the Internet can hardly be predicted, nor is it possible to specify the one best development path. However, one can outline a long term vision that takes into account prototypical development steps. The evolutionary model that has been designed for E-MEMO (see Figure 2) consists of four prototypical stages. Each stage symbolizes a certain technological and organisational capability. Except for the first stage, every other stage requires the ability of the previous stage to be available. However, the model does not prescribe that a step has to be frozen as soon as it is accomplished. Sometimes it may make sense to take two steps at a time. Also, it will not always be possible to assign a particular state of a company to exactly one evolutionary

stage. The purpose of the model is only to give a long term orientation for development in E-Commerce. Such a long term perspective helps to protect investments into first steps, since they can be designed in a way that fosters the realisation of further steps.

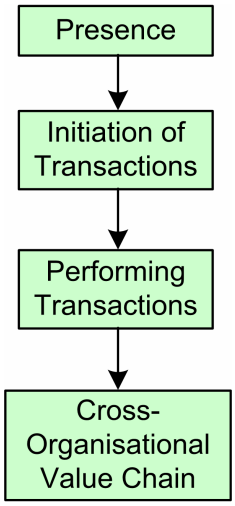

Figure 2: Evolutionary Development Model of E-Commerce

In the first stage, *presence,* a company uses the Internet only to present itself on one or more web pages. The following stage, *initiation of transactions*, requires to present information about products and, optionally, terms and conditions. With respect to procurement, the initiation of transactions can be supported by making use of suppliers' web pages or electronic market places. *Performing transactions* is at the core of E-Commerce. It includes the entire process from initiating a transaction to after-sales service. The level of automation may vary. However, media clashes should be avoided during the order management process. Similar to the previous stage, it applies to both, sales and procurement. The highest prototypical stage of evolution, cross-organisational value chains, corresponds to the vision 'Collaborative Planning, Forecasting and Replenishment' (CPFR), propagated by the 'Voluntary Interindustry Commerce Standards Association' (see [VICS98]). It requires not only establishing cross-organisational business processes, which integrate processes and corresponding information systems on buyer and seller sides. In addition to that, it includes the synchronisation of plans, in order to decrease overall cost. If, for instance, a large shipping corporation, orders a part of its trucks a year in advance, the truck producer can decrease its cost by reducing risk. This is also the case for the truck producer's suppliers.

Every stage is described in more detail using the following structure: technological enablers, business opportunities, critical success factors, risks, and costs. Table 1 and Table 2 give an overview of corresponding descriptions.

Web-Presence	
Enablers	external web hoster; Internet access; software to maintain content
Opportunities	reach new customers; reduce cost of acquisition of new customers; generate positive ‚virtual' image
Success Factors	design of web pages should correspond to the intended corporate image; focus should be on information and communication; e-mail address and fast response
Cost	relatively low; major cost driver: maintenance of content;
Risk	damage corporate image by poor web presence or insufficient response to e-mail requests
Initiation of Transactions	
Enablers	‚web shop'; hosted by external service provider or internal solution, the latter offering better chances for integration with existing systems; integration with product database; multimedia data for product descriptions in database; web server; application server
Opportunities	reduce cost of acquisition of new customers; reduce cost of initiation of transactions; attract new customers in distant regions; cooperation with other companies to offer additional services; virtual organisation
Success Factors	attractive presentation of products; online configuration of products (if possible); topicality of content; fast response to customer requests; value adding services, e. g. product information, life style related content etc.
Cost	depend on peculiarities and range of products; if there is a large range of products, integration with existing product database is mandatory, which may require substantial changes of existing systems; otherwise: maintenance of data by administrator
Risk	‚cheap' looking presentation of products decreases corporate image; generate orders that cannot be processed; annoyance of customers by data that is not up to date

Table 1: Structured description of the evolutionary stages of E-commerce

Performing Transactions	
Enablers	legacy applications to be used within these processes should be tightly integrated with the components that support interaction with customers via the Internet; workflow management systems can promote integration; often, electronic payment systems will be required; tracking capabilities
Opportunities	radical improvement of process efficiency; attract new customers through attractive pricing and/or new pricing mechanisms, such as auctions; good chances for efficient customer relationship management; additional value for customers by shorter processing time and/or tracking features; virtual organisation
Success Factors	thorough design of involved business processes using conceptual models; implement re-organized business processes; a further option, which may be a success factor, too, is the deployment of dynamic pricing systems, such as auctions; consistent marketing, especially terms and conditions; deployment of IT standards
Cost	varies with the amount of automation along the process chain
Risk	the higher the level of automation, the higher the risk of system failure; annoying/loosing customers; organisational change may cause friction
Cross-Organisational Value Chain	
Enablers	integration of business processes along cross-organisational process chains; sophisticated information systems; sophisticated planning and scheduling systems; integration with product planning systems
Opportunities	dramatic reduction of overall cost; benefit from structural change along the value chain
Success Factors	comprehensive models of involved business processes; deployment of IT standards; deployment of advanced concepts for planning and scheduling
Cost	high investments necessary, both in technology and organisational change
Risk	high level of change throughout the company; dependency from other members of the integrated value chain; high level of dependency from sophisticated information systems

Table 2: Structured description of evolutionary stages in E-commerce (cont.)

2.2 Micro Perspective: Designing and Introducing Solutions

The evolutionary model provides a prototypical guideline for long term development into E-Commerce. Once, a company has decided for a particular stage, a project has to be set up. Such a project involves a more concrete process model. A generic process model could, for instance, involve the following steps: Analysis of strategic options, design of specific strategy, analysis of existing business processes, (re-) design of business processes, implementation of business processes (including supporting information technology). Performing this process from scratch will, however, be too much of a challenge for many firms, especially for SME. To allow for a better support, E-MEMO offers a specialized process model that makes use of conceptual frameworks on different levels of abstraction and a library of business process models (see fig. 1). The process includes five major steps: analysis of strategic options, design/configuration of a strategy for E-Commerce, analysis of organisational options, selection/specification of business processes and implementation of business processes. Each stage is described using the following structure: *objectives*, *supporting concepts/artefacts*, *participants*, *documentation*. Figure 3 illustrates this for the design/configuration of a corporate strategy for E-Commerce.

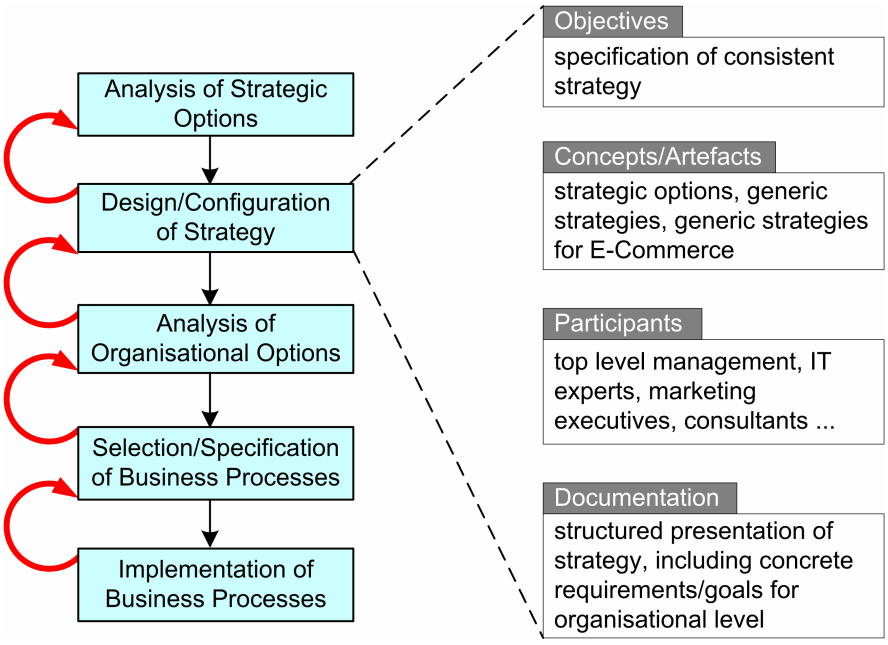

Figure 3: Micro Process of E-MEMO

This report is aimed at presenting a framework to support the analysis of strategic options that are specific for E-Commerce.

3 Focus of ECOMOD

There is an enormous range of possible strategic and organisational settings that somehow make use of E-Commerce. Therefore, feasibility reasons demand to focus on a sub range. We suggest a focus that is defined by three dimensions: *generic strategy*, *evolutionary stage*, *internal value chain*. In his seminal work on strategic planning, Porter differentiates three generic strategies: *focus*, *cost leader* and *product leader* [Port85]. In this dimension, the focus of ECOMOD is on cost leader. This is for two reasons. Firstly, we assume that especially with SME, the potential for cost reduction through Internet technologies is of crucial importance for sustainable competitiveness. Secondly, we assume that this generic strategy is better suited to find general patterns both for concrete strategies for E-Commerce as well as for corresponding business processes. Focus and product leader require taking into account specific peculiarities of customer demands or products. With respect to the dimension *evolutionary stage*, we focus on performing transactions. We assume that this stage is of pivotal relevance for most SME for a number of years to come. Despite its potential, cross-organisational value chain will be too much of a challenge for many SME these days. Finally, there is the internal value chain. Particular aspects of E-Commerce may penetrate the entire value chain. Our focus is on *procurement* and *sales*. Note that we use a conceptualisation that is different from the one Porter suggested: procurement includes aspects of inbound logistics, and sales includes outbound logistics. We do not take into account operations, such as production, especially because of the tremendous contingency of this activity. Figure 4 illustrates the focus taken in ECOMOD.

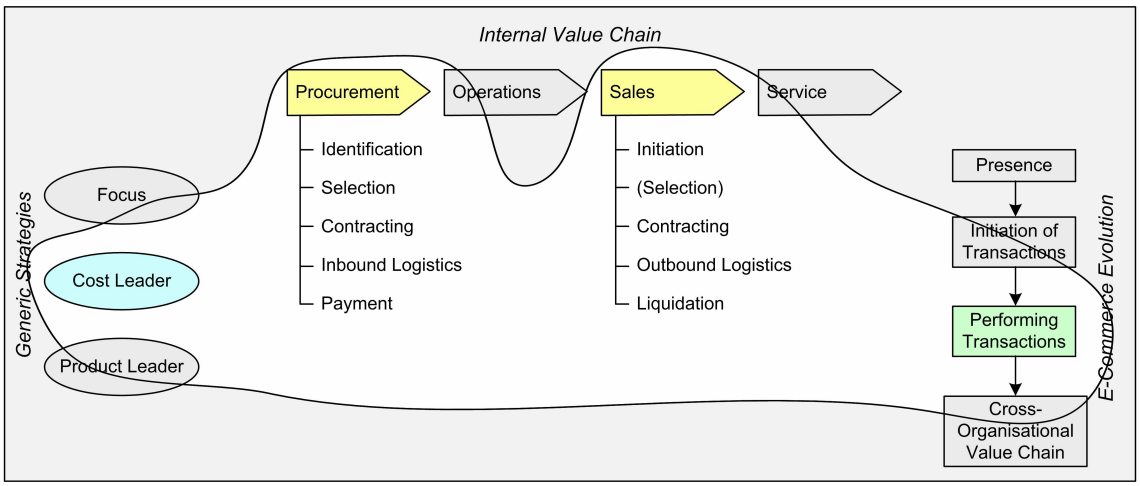

Figure 4: Focus of ECOMOD

Note that we do not intend to take the focus too seriously. In some cases, it makes sense to take into account aspects that are outside the focus. If, for instance, cost reduction results in opportunities for new products and services, this should not be neglected. This is also the case, if after-sales service allows for competitive advantage. Furthermore, structural change may imply the elimination of intermediaries, which can lead to an internalisation of former external services. Hence, in those cases, the focus is not strictly on the internal value chain. In general, the *integration* of procurement and sales with other activities cannot be neglected.

4 Concepts to foster Strategic Analysis for E-Commerce

Well known concepts for strategic analysis – such as SWOT-Analysis, Porter's Value Chain [Port85], and the Balanced Score Card [KaNo96] – offer guidance for analysing a company's current strategic situation as well as for identifying future opportunities and threats. Since these concepts have been developed to be applicable for various types of industries and enterprises, they do not include specific concepts for E-commerce and, therefore, usually require extra effort to apply them to the specific requirements and peculiarities of a certain company. In order to provide SMEs with more targeted guidance, in the following subsections the classical concepts of strategic analysis will be adapted to the specific requirements of strategic analysis for E-Commerce. Section 4.1 describes general peculiarities of strategic analysis for E-commerce. Afterwards the framework for strategic analysis is presented (section 4.2). Section 4.3 gives directions for documenting the analysis results.

4.1 Peculiarities of strategic analysis for E-commerce

Four aspects can be identified as peculiarities of the Internet from a strategy perspective: a general structural change, opportunities and risks through the usage of advanced communication technologies, decreasing cost of communication (transaction costs), and network effects.

4.1.1 Structural Change

Starting with the usage of information technology in businesses two decades ago, a general structural change – of traditional competitive structures and value chains – could be observed in many industries (see e. g. [PoMi85]). Information about future changes in demand, value chain partners, and competitors has become a critical factor. The ability

to offer flexible and individualised services to the customers on the basis of this information has become crucial to achieve competitive advantage ([Alte02] S. 8). The more and more increasing penetration and usage of the Internet accelerates this structural change (see [Alte02] S. 8). The high availability of the Internet allows information about prices and products to be widely accessible without any geographic or timely constraints. This, however, tends to lead to highly transparent markets, which – in conjunction with globalisation and deregulation – tightens competition even further. Hence, when focusing on strategies for E-Commerce, (possible) changes in industry structure – e. g. implications of deregulations and restructuring of value chains – have to be considered. Furthermore, structural change implies opportunities with respect to eliminating intermediaries or to offering particular services that used to be supplied by full service providers in the past.

4.1.2 Competitive advantage and new risks through information technology

Electronic Commerce is characterised by the intensive deployment of information technologies. While information technology is a 'must' in many cases, its elaborate deployment can transform it to a 'competitive weapon'. Indeed, since its early days information and communication technologies (ICT) were considered as enablers for competitive advantage (see e. g. [PoMi85], [JoVi88], [LMS97]). It was apparent, however, that information technologies implies a potential risk of structural change inside an industry sector. „A company's search for competitive advantage through information technology often also spreads to affect industry structure as competitors imitate the leaders strategic innovations." ([PoMi85] S. 155). Nowadays, ICT and the Internet not only present a chance to diminish costs and rationalize processes. In some industries the usage of information technologies has become necessary in order to keep up with competitors, to fulfil the high expectations of customers, or to provide the technical infrastructure demanded by major customers (see e. g. [Ober03], [Haer00]). The outlined development emphasizes the fact that certain new types of risks have to be considered, when analysing strategies for E-commerce: beside the risk of highly transparent markets – which can be an opportunity as well –, the general risk of uncertainty concerning future events, risks of sudden leaps in technology, new market and business models have to be taken into account (see e. g. [Haer00] S. 110 f).

4.1.3 Decreasing communication costs and its consequences

Significantly reduced communication costs (transaction costs) offer new opportunities for reducing overall costs and increasing profits by **outsourcing** certain business func-

tions to specialized providers. Hence, when using the Internet the question of in-house production vs. outsourcing should to be reconsidered.

Close **cooperation** with supply chain partners and other value providers is likely to become more cost effective (since communication and interaction costs decrease) and a possible source for strategic competitive advantage since it allows for a better differentiation from competitors. Along with reduced communication costs, the Internet offers the opportunity to directly interact with customers of the subsequent value chain level and in this way to take advantage of the surplus of former intermediaries (**disintermediation**).

4.1.4 Network effects

The success of certain Internet applications depends on a critical mass of users, which – when achieved – will lead to even further spreading of the respective technology. This network effect frequently becomes relevant in Electronic Commerce. For example, the success of application programs for viewing digital products depends on a critical mass of users. This effect is also relevant for security protocols and other business transaction related functionality, which is not included as part of the standard Internet protocols.

4.2 A framework for strategic analysis in E-commerce

This section summarizes the most prominent approaches for strategic analysis and their adaptation for E-commerce. The framework suggested here is primarily based on SWOT-Analysis, which has been coined summarizing relevant aspects of the environment as well as internal characteristics that need to be considered for strategic analysis (see e. g. [FaCa03] p. 225 ff). These aspects are, on the one hand, internal *Strength*s and *Weaknesses* and, on the other hand, *Opportunities* and *Threats* from external industry and the global environment. The SWOT framework is relatively abstract and does not entail very much domain specific semantics. However, the framework points out the necessity to consider external opportunities and threats as well as a firm's internal strengths and weaknesses. In this way it combines two schools of thought in the research field of strategic analysis: the industry structure or market based view and the resource-based view, respectively. Table 3 gives a brief overview of the major concepts and schools of thought assigned to each side of the SWOT framework.

Strengths & Weaknesses	Opportunities & Threats
▪ Resource based view ▪ Competences (Prahalad / Hamel) ▪ Analysis of activities in the Value Chain (Porter)	▪ Structure-Conduct-Performance Model ▪ Industry Analysis, Five Forces Model (Porter) ▪ Common strategic environment (Political, Economic, Social, Technological (PEST), legal, natural environment)

Table 3: Approaches for strategic analysis corresponding to SWOT-Analysis

Figure 5 (on page 13) depicts the four steps of the analysis process together with the primary analysis results of each step and their dependencies.[1] The following subsection introduces the concepts for the analysis of the external environment of the firm comprising the global environment and industry structure (section 4.2.1); here, the Five Forces Model as suggested by Porter is extended by additional specific requirement of strategic analysis for E-commerce. Afterwards the strategic analysis of internal resources and the value chain is discussed (section 4.2.2). Referring to the idea of the Balanced Scorecard (see [KaNo92]), this section ends with some remarks on the necessity to balance your strategic analysis; section 4.2.3 suggests some criteria, which allow reassessment and balancing the set of strategic options identified in the previous steps. In order to provide a concise overview, a list of key questions and analysis results is given at the end of each section.

[1] A concise overview in form of a list of key question and results can be found in the appendix.

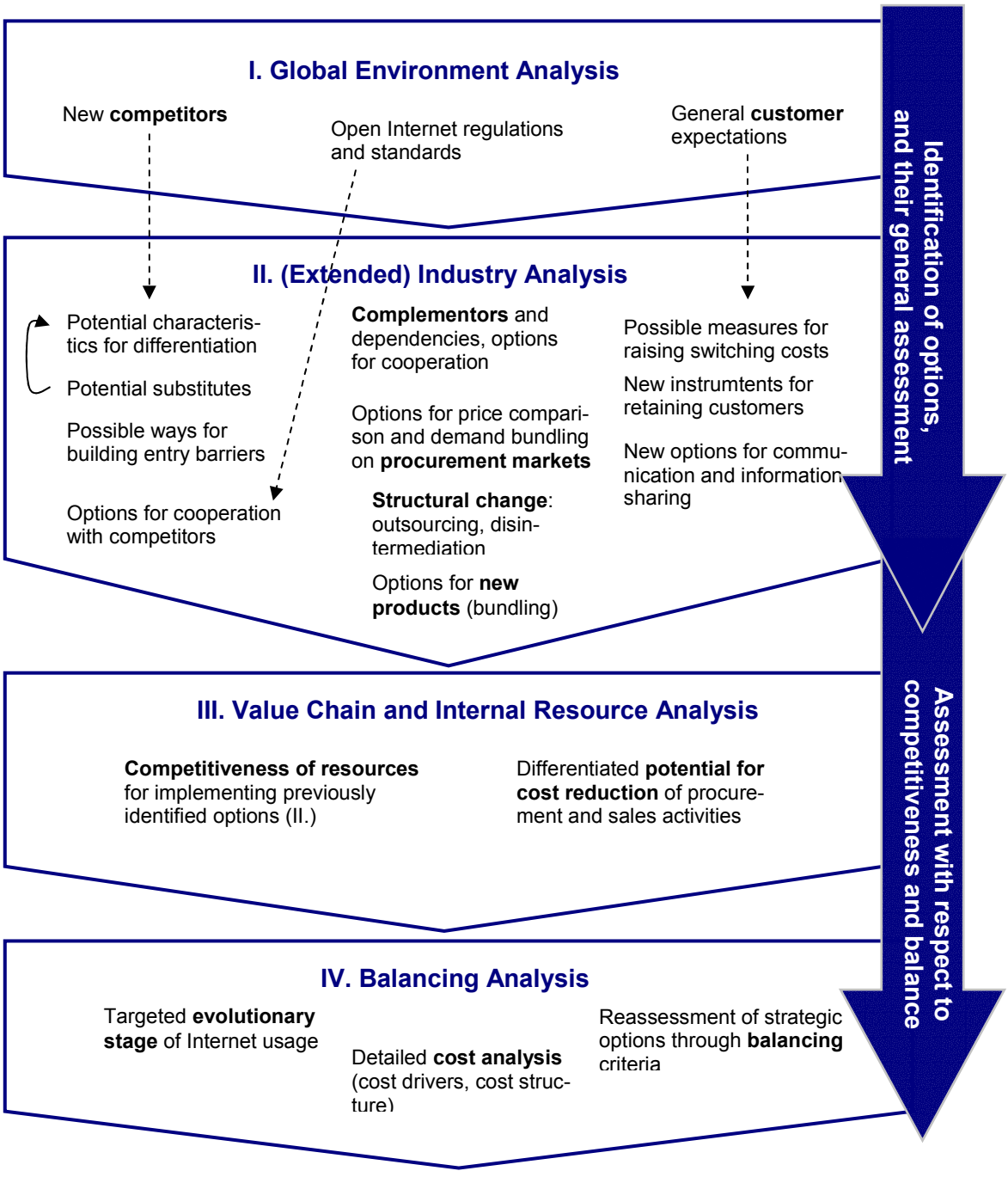

Figure 5: Process for strategic analysis in E-commerce

4.2.1 Analysing the external environment

A firm's external environment is – from a strategic perspective – frequently divided into two parts: the immediate industry structure of the firm (micro environment) and the common strategic environment going beyond the industry a firm belongs to (macro environment). Opportunities and threats can be found on both levels. Even though this distinction is – to a certain degree – a matter of subjectivity, we will refer to it following the standard strategy literature (see e. g. [FaCa03] p. 225 ff).

Figure 6 depicts the aspects, which should be considered for the strategic analysis of a firm's external environment, merging characteristics of the global environment, industry structure as favoured by Porter (Five Forces Model) as well certain extensions with respect to the specific requirements of Electronic Commerce.

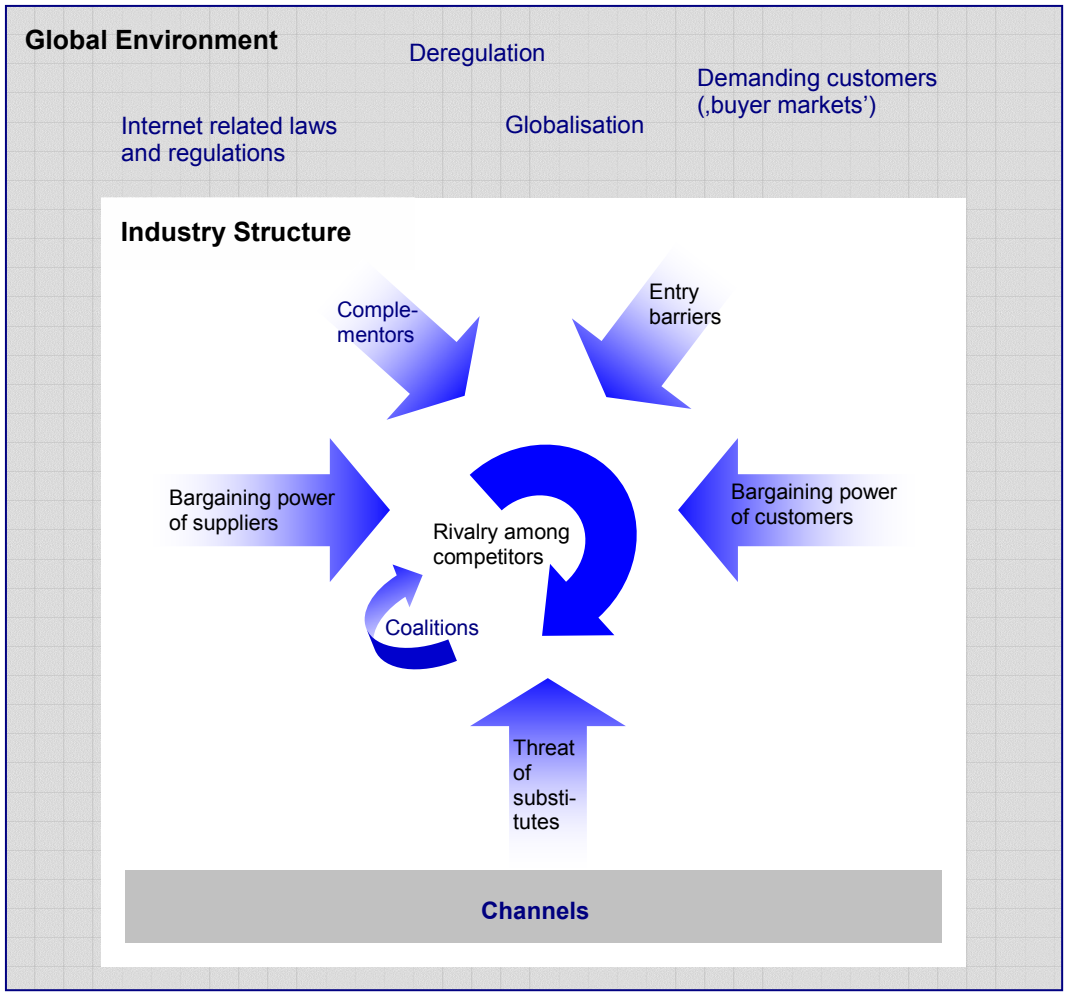

Figure 6: Analysis framework for the strategic environment

After the discussion of the macro-environment, the micro-environment will be presented using Porter's Five Forces Model. Finally, aspects of the extended industry structure are illustrated.

4.2.1.1 Macro-environment

The common strategic environment (or macro environment) is usually divided into up to six dimensions: the political, economic, social (ethical), technological, legal, and natural environment. With respect to the strategic use of the Internet, it should be investigated to which extent globalisation – promoted by the wide spread of the Internet and by deregulations fostered by public administration – currently affects or possibly in the future will influence industry structure (see e. g. [Haer00]).

When assessing public regulations as another factor, it can be stated that the Internet tends to dissolve official borders and areas of control (see e. g. [StSc00] p. 179). Hence, laws and regulations have to be reconsidered, when the usage of the Internet is planned, because there might be (legal) issues, which have not been constituted and which might require the cooperation with competitors for setting industry wide standards.

With increasing saturation of markets and ever growing competition, (end-) consumers have become more demanding, so that sellers' markets have turned into buyers' markets (see e. g. [KASW02]), which are becoming more and more global markets. In this situation, a careful analysis of current and future competitors and changing customer demands is mandatory.

Key questions for analysing the global environment	Results
☑ To which extent is your industry affected by globalisation and deregulation? Which **competitors** will additionally be on the **global market** of your Industry on the Internet?	Set of (new) competitors on the Internet
☑ Are there any 'holes' in the necessary set of **regulations** on the Internet? Could it be beneficial to cooperate with competitors to find an industry wide solution?	Set of open regulations, approaches for solving them
☑ Consumers in general have become more demanding (**buyers' markets**); to what extent does this apply to the customers in your industry? Have your competitors already set higher standards (e. g. in terms of price and service levels) rising customers' expectations?	Expectations of customers in terms of price and service levels

4.2.1.2 Micro-environment

With Industry Structure analysis Porter suggests a framework for identifying and analysing the opportunities and threats in an industry ('Five Forces Model' [Port80]).[1] The model can be applied for a firm to position itself (and to defend its position against competitors), to influence the forces in order to improve ones position, and to anticipate change in order to improve ones position before the competitors do.

The wide spread of the Internet differently affects the competitive forces of diverse industry sectors. General tendencies can be identified, whose applicability should be evaluated when external opportunities and threats are analysed with particular respect to E-commerce (see [Port01] p. 66 f):

Rivalry among existing competitors

Using the Internet usually widens geographic markets increasing the number of competitors and, in this way, intensifying competition. Lower searching costs for customers tend to lead to higher market transparency and increased pressure for price discounts [Bako98].

Entry barriers

Since there is (virtually) no need for sales force and physical assets, barriers to entry are further reduced: „anything that Internet technology eliminates or makes easier to do reduces barriers to entry" ([Port01] S. 67). It has to be realized, that Internet applications often cannot be used as entry barriers, since their inimitability can rarely be protected. However, in case a particular business model depends on sophisticated technology that cannot be copied rapidly, technology can protect competitors from entering markets. Furthermore, new opportunities arise in particular for small and medium sized enterprises with limited resources to act on bigger markets by deploying Internet technology and to eliminate intermediaries by directly accessing customers of the next level in the supply chain. Another aspect of structural change is the strategic decision about outsourcing of non core activities. Since transaction costs tend to decrease, the option of outsourcing becomes more and more economically feasible when using information technology (see e. g. [PRW99]).

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[1] The Structure Conduct Performance model takes upon a similar viewpoint, however not considering the ability of firms to alter industry structure (see e. g. [FaCa03] p. 233).

Bargaining power of suppliers

Suppliers are (virtually) capable of directly selling their products to customer of the next level, which would decrease the power of former intermediaries and therefore tends to raise the bargaining power of suppliers. However, the Internet offers, in particular, small and medium sized enterprises the opportunity to bundle demand in a cost efficient way, which can increase their bargaining power substantially.

Bargaining power of customers

Better access to information about product characteristics and price comparison tends to increase the bargaining power of customers. Switching costs decrease, since the competitor is just a click away. However, there are new opportunities for raising the switching costs perceived by customers, for example by establishing close links to technologies or standards (Lock-In effects) or through more emotional bonds (e. g. communities, see for example [Kund01]).

Threat of substitute products or services

The wider geographic market tends to lead to more competition through vendors of substitute products. Additionally, Porter assumes: „By enabling new approaches to meeting needs and performing functions, [the Internet] creates new substitutes" ([Port01] S. 66). Therefore, as part of strategic analysis, the specific chances and risks of new value adding services, products, or product bundling should be investigated.

Key questions for analysing industry structure	Results
☑ Transparent sales markets are a potential threat: In which ways can you **differentiate** yourself from competitors, in particular those on the Internet?	Set of potential characteristics for differentiation
☑ In which ways can you (re-)**raise entry barriers** for competitors on the Web? Are there certain (innovative) functionalities you could provide using proprietary software?	List of possible ways to raise entry barriers
☑ How likely are your suppliers to **overleap your value chain**? What are your advantages (e. g. your specific knowledge about your customer markets) that could help you stay in the value chain?	Incentives of suppliers for your disintermediation, customer market specific knowledge

☑ In which ways can prices be compared and demand bundled in order to **reduce procurement prices**? What is the relation of expected price reductions and the initial investments as well as regular payments (efforts) for obtaining the relevant information?	Market overview of service providers for comparing prices or bundling of procurement products, other ways for automated price comparison, necessary investments, expected price and cost reductions
☑ What are your current instruments for **retaining customers**? What are typical ways of your industry for keeping customers? Are these instruments still effective after a transition to E-Commerce? What (new) measures could you provide for raising the switching costs perceived by your customers?	Measures for raising switching costs, their expected costs and usefulness
☑ Are there – or are there likely to be – providers of products, which can serve as **substitutes** for your current products?	Potential substitutes (treat as competitors, see above)
☑ Given your company's current market position, what are the specific chances and risks for new value adding services or **new products** (product bundling) through Internet usage?	Potential new products or services, implied risks and chances.
☑ The Internet allows for reaching a much greater number of customers. Would your business benefit from an **increased customer base**? In particular, would you expect economies of scale? How is your cost structure suited to deal with increasing demand (see also section 4.2.3)?	Chances and Risks of an increased customer base, in particular: suitability of current cost structure
☑ Using Information technology and the Internet decreases transaction costs. What are the chances and risks of your company to **outsource** non core activities?	List of (non core) activities, chances and risks for outsourcing these.
☑ Which **downstream markets** would you be able to enter due to lower entry barriers? Which synergies could be taken advantage of and what are the expected costs?	Potential new markets and necessary investments, potential synergies

4.2.1.3 Extended industry structure

Beside the five forces suggested by Porter, further forces or participants of an industry should be analysed in order to evaluate the strategic environment of a firm when concentrating on the strategic options offered by Electronic Commerce:

Complementors

With reduced communication costs it is generally predicted that firms will be more and more specialized in the future. However, taking into account the empowered customers in E-commerce, it is crucial to be aware of the market situation and strategic plans of suppliers of complementary products, because bundling your product with other products can significantly increase the value perceived by customers and in this way allow for competitive advantage. Hence, complementors and their strategic actions can have a considerable influence on your company's profits (see [BrNa96], [Haer00] p. 132).

Coalitions

The idea of coalitions with competitors in the same industry is another aspect that should be considered when planning for an E-commerce initiative (see [Haer00], 'co-opetition' [BrNa96]). Bundling demand for supply is just one example for the usage of the Internet to allow new types of relationships that both participants can benefit from. In many cases several competitors have cooperated in order to develop and agree on a standard for using the Internet in an industry (e. g. standardized security protocols have been developed by multiple credit card companies, see [Haer00] p. 128). Here, the above mentioned network effects become relevant: an industry has to mutually agree on one type of standard since a critical mass of users – customers or suppliers – is necessary in order for a standard to be economically feasible.

Channels

From the customer's view point the Internet serves as another channel for communication with a certain (product or service) provider. Hence, the current usage and relevance of existing communication channels by customers and suppliers should be analysed (see e. g. [Port01], [HaKe00]). Channel specific characteristics have to be considered and analysed with respect to the current behaviour and expectations of target groups.

In particular, it is mandatory to investigate the new options for effective communication or information sharing with suppliers and customers. In this context it is necessary to analyse to which extent corresponding technologies are available to your company, customers, and suppliers. For each of the communication partners (groups), you should investigate which investments are necessary for acquiring the respective technologies.

Key questions for analysing the extended industry structure	Results
☑ What are the current (and potential) providers of products complementary to your products and services (**complementors**)? To which extent are they likely to affect your market share by their strategic movements? For highly dependent complementary products: in which ways could you cooperate in order to achieve sustainable competitive advantage by providing your customers with a bundle of products?	List of complementors, degrees of dependencies, ways for cooperation
☑ In which ways is the Internet deployed by your competitors for communicating with customers and/or suppliers? Could you profit from **cooperating with your competitor(s)** in order to develop necessary standards for using the Internet in your industry?	Competitors' E-commerce initiatives, potential aspects for cooperation
☑ From your customers (and suppliers) view point: what are the advantages or incentives for using the **Internet as a communication channel**? Are your current target groups likely to use the Internet? What are your target group's specific requirements for channels of communications in general? How can these requirements be applied to the Internet?	Groups of suppliers, target groups of customers, their requirements or expectations for communication channels
☑ What are the **new options for communicating** and sharing information with your suppliers and customers? Is the technology necessary for implementing these options available to all communication partners? If not, what are the costs for acquiring and using the new technologies for each group?	New options for communication. Assessment of their availability and costs for each communication partner

4.2.2 Analysing internal competitive resources

Three aspects have already been mentioned in the context of industry structure analysis (see section 4.2.1.2), which require the thorough analysis of internal resources in order to allow:

- raising entry barriers for new competitors,
- developing (or identifying) customer market specific knowledge,
- increasing switching costs in order to retain customers.

The Resource Based view emphasizes the importance of internal resource, i. e. strengths and weaknesses of the firm, for strategic analysis and strategy development; resources can be defined as "(tangible and intangible) assets, which are tied semipermanently to

the firm" ([Wern84] p. 172), such as brand names, technology knowledge, certain skills of employees, and business processes.

Core Competences

The concept of (core) competences introduced by Prahalad and Hamel [PrHa90] can also be assigned to the resource based view. They argue that with market boundaries changing more and more quickly, traditional strategic goals are elusive – such as for a certain business unit to become market leader with a certain product. Therefore, a company should focus on acquiring and maintaining long term core competences, which would allow potential access to a wide variety of markets, and, hence, could serve as source of competitive advantage in times of changing market boundaries. Several criteria can be identified in order for competences (or resources) to enable a sustainable competitive advantage.

- **Access to a wide variety of markets:** A core competence or resource should allow potential access to a wide variety of markets (i.e. should be useful for value creation in diverse ways) [PrHa90]. Firms acting in volatile markets potentially affected by structural change should focus on those resources and competences which do not depend as much on changes in the environment ([Haer00] p. 138).
- **Significant contribution to perceived customer benefits:** A critical resource should be able to make a significant contribution to the perceived customer benefits [PrHa90]. In general, a resource can be viewed as being the ability of a firm to solve its customers problems (see e.g. [Haer00] p. 137). Some authors argue that this aspect of resources becomes even more important in E-commerce, since bargaining power of customers tends to increase (e. g. [Haer00]). Hence, in E-commerce the focus should be set on resources, which are accepted and rewarded by customers.
- **Difficult to be imitated by competitors:** In order for a competence or resource to allow sustainable competitive advantage, it must be difficult to be imitated by competitors [PrHa90]. When planning to engage in E-commerce it has to be realized, that information technology by itself rarely allows for a sustainable competitive advantage, because it is relatively easy to imitate, which is facilitated even further by the open nature of the Internet (see [Haer00] S. 143). The uniqueness of resources can be fostered by creating dependencies and links between them ([Haer00] p. 139). Hence, the imitation of sheer technological infrastructure can be outrun by combining its deployment with customer oriented business processes and close supplier relationships.

Value Chain

The well known Value Chain, suggested and described by Porter, differentiates primary and supporting (value) activities on a relatively abstract level; it is therefore applicable to enterprises in various industries [Port85]. Porter describes the value chain as a set of activities "through which a product or service is created and delivered to customers" ([Port01] p. 74). Different activities yield different contributions to the overall value created. The value chain concept can be used to identify the value created in each activity and to analyse the relevance of different parts of the value chain for the identification of strengths and weaknesses. Furthermore, competitive advantages can be identified by comparison with competitor's value chains.

The value chain approach offers concepts on a relatively abstract level. The activities of a value chain frequently correspond to (groups of) organizational units, which create and contribute a similar value. As introduced above, the simple architecture of the Internet allows for very cheap and flexible communication. Consequently Porter states that it is the ability of the Internet to "link one activity with others and make real-time data created in one activity widely available" ([Port01] p. 74). Rationalization and automation has been fostered by earlier technologies in each individual activity. When planning to engage in E-commerce for achieving competitive advantage, the linkages between the activities and interfaces to external partners should be given special attention. Costs can then be reduced by better process integration and coordination with different activities and external partners.

Competitiveness of procurement and sales

Further elaborating the more general issues, which have been investigated in the context of industry structure analysis (level II, see Figure 5), and with respect to the focus we set for ECOMOD (see Section 3), options for automation and cost reduction through Internet usage in procurement and sales have to be investigated in more detail.

To this end, we suggest two approaches: the analysis of major activities (in particular procurement and sales) and their competitiveness compared to the market leader, and the more detailed analysis of procurement and sales with respect to the potential for cost reduction.

Figure 7 depicts the major activities of a business unit: procurement, production, sales, and service. In order to evaluate the competitiveness of the firm the relevance or importance of each activity to customers, the firm's productivity or efficiency as well as the respective market leader's strength should be identified.

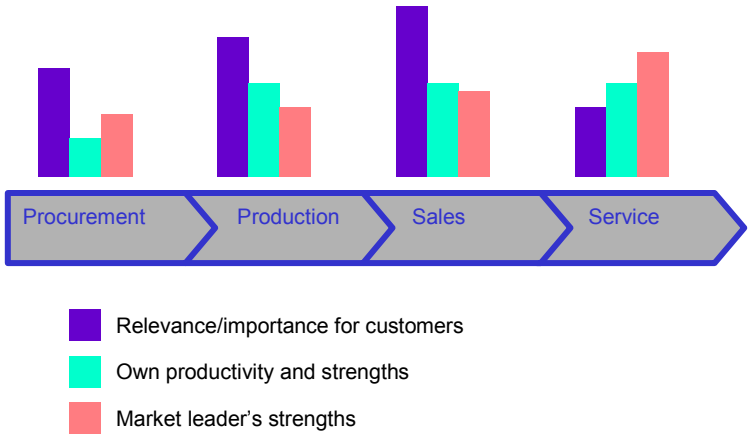

Figure 7: Business unit assessment of competitiveness

For further operationalisation we suggest to differentiate a number of part-activities for procurement and sales, respectively, for which the competitiveness can be assessed individually; these can be applied for procurement as well as sales activities:

- Identification (of potential transaction partners)
- Decision (selection of a certain partner for performing a transaction)
- Agreement (purchase)
- Logistics (inbound/outbound)
- Payment

Due to our focus on cost reduction through the deployment of Internet technology, the following criteria have been chosen for analysing each procurement/sales activity with respect to cost reduction opportunities:

- outsourcing
- elimination of intermediaries
- cooperation
- automation (of processes)

Figure 8 depicts the analysis of the competitiveness of procurement activities. The list of key questions and results draws on this operationalisation of the more general aspects of competitive resources and activity linkage described earlier.

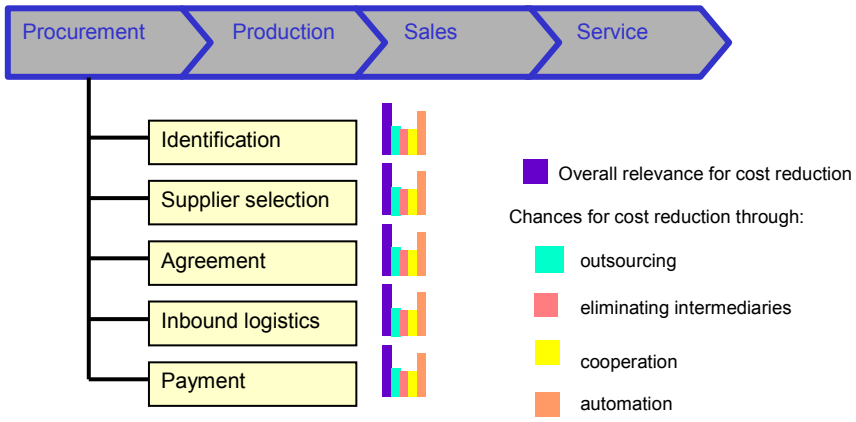

Figure 8: Exemplary analysis of the competitiveness of procurement activities

Key questions for analysing internal resources	Results
☑ Which **resources** can you build on in order to raise entry barriers, increase switching costs, or prevent your suppliers from overleaping your value chain? Are these resources truly competitive according to the given criteria?	Set of resources to differentiate from competitors, raise entry barriers, or increase switching costs. Degree of competitiveness of these resources.
☑ Analyse the different five activities (see above) for procurement and sales with respect to the **potential for cost reduction** through outsourcing, eliminating intermediaries, cooperation, and automation.	Differentiated list of options for cost reduction.

4.2.3 Balancing your strategic analysis

When defining an E-commerce strategy it is crucial not to be biased in a single direction (e. g. striving for cost reduction only and ignoring customer preferences), but the entire Internet strategy should be well-balanced to a certain degree. Consequently, the process of strategic analysis should be well-balanced as well.

The Balanced Scorecard has become very popular in practice during the last 10 years, because of its claim to follow the objective of being ‘well-balanced’. It considers different views or perspectives at a company and in this way overcomes the typical problems of traditional performance measurement systems, which focus solely on the financial aspects of an enterprise (see [KaNo92], [KaNo96]). The scorecard suggests the following four perspectives for a holistic performance measurement:

- The F*inancial Perspective* is aligned with typical controlling objectives related to profitability, growth and shareholder value.
- The C*ustomer Perspective* is aligned with objectives relevant from the customers' point of view, such as quality, performance, and service.
- The *Internal Perspective* translates the customer based measures into internal measures concerning business processes, fulfilment, and productivity.
- The *Innovation and Learning Perspective* is based on measures for assessing the ability to launch new products, the potential to learn and to further improve processes.

When analyzing different potential options for deploying Internet technology the four perspectives should be taken into account.

Financial Perspective

As with every initiative for changes in business practice or processes the financial aspects require careful consideration. The potential of E-commerce to reduce costs – in particular for communicating with customers and business partners – is frequently emphasized. However, in order to fully take advantage of this opportunity, initial investment in infrastructure and process restructuring is necessary. Furthermore, a lot of cost reductions can only be realized if a critical mass of customers/suppliers uses the new channel for communication. In particular, small and medium sized enterprises have to be aware of these effects and thoroughly analyse the specific options before implementing changes for engaging in E-commerce.

Customer Perspective

A firm's engagement in E-commerce has to be beneficial from the customer's perspective. Hence, every initiative of using the Internet – e. g. for interaction with suppliers and shipment partners – should, from the customer's view point, add value to the product or service offered.

As a result of a study of 44 companies, Plant et al. extend the customer perspective by four subcategories, which have been identified to be relevant for a corporate on-line strategy and the measurement of its success [PWO03]:

- The customers' perception of a **brand** value and the costs related to building and maintaining the intangible asset of a name brand.

- The customers' perception of the **service** provided and the cost associated with the service provision at different stages in the customer relationship development – i. e. during acquisition, purchase, fulfilment, and customer retention.
- In some industries the identification of target groups is highly dependent on the communication channel chosen. Therefore, **market** segmentation as well as demographic and other criteria has to be re-examined when engaging in E-commerce.
- **Technology** usage and acceptance by customers (and suppliers) should also be considered as a relevant factor for assessing the success of an E-commerce initiative.

Internal Perspective

The internal perspective represents internal issues of implementing the aspects relevant from the customer's perspective (see above) through business procurement, production and fulfilment processes.

Innovation and Learning Perspective

Flexibility is a central characteristic for employees affected by changes through the implementation of strategic options for E-commerce. This characteristic is very important for extending the markets through vertical integration or the opening of new communication channels. It frequently requires employees' willingness to adapt their every day working processes to new requirements and technical infrastructure.

Key questions for a balanced strategic analysis	Results
☑ With respect to the evolutionary levels described in section 2.1 what **stage of Internet usage** do you plan to initially realize? Refer to the investments and resources necessary for implementing this stage: how do they apply to your particular company?	Evolutionary stage, necessary investments and resources
☑ For a detailed **cost analysis**: (1) Identify major cost drivers, such as management of business processes, staff, activities that could be outsourced. (2) Analyse your structure and proportions of costs, such as fixed and variable costs etc.	Major cost drivers, cost structure

Balanced assessment of individual options for Internet usage:	
☑ Is a critical mass of users necessary for economically implementing a strategic option of Internet usage?	Critical mass of users
☑ Does a particular option of using the Internet potentially affect your image, the level of service provided, or the target market segments?	Dependencies of Internet usage options to brand value, service level and target groups
☑ Which changes in processes and technology usage does the implementation of an Internet usage option imply for your employees? Are particular measures necessary to improve their flexibility?	Changes in working processes, level of flexibility of employees, measures for flexibility improvement
☑ Are the options for Internet usage oriented towards customer needs and requirements?	List of customer benefits for each option of Internet usage

4.3 Documentation of Results

In order to prepare for the succeeding strategy design, the results of strategy analysis should be documented thoroughly. Thus, this section provides a description of the structure and type of results of the four phases of strategy analysis (see Figure 5, page 13). Because of the dependencies of resource analysis (III) and balancing analysis (IV) to industry structure analysis (II), the result structure of industry structure analysis is described last.

4.3.1 Global Environment

The results of the analysis of the global environment are mainly descriptions of competitors' characteristics, not yet constituted Internet related regulations and standards, and customer expectations in terms of price and service levels. The following table lists suggestions for the structure of each result:

Result	Result structure
Set of (new) competitors on the Internet	→ For each competitor description of business model and current market share
Set of open regulations	→ Textual list of open regulations and standards for interaction/communication
Expectations of customers in terms of price and service levels	→ Industry specific service characteristic, → Chart showing past and expected development of customer expectations, → Chart comparing own service and price levels with industry standards

4.3.2 Value Chain and Internal Resources

The analysis of internal resources is largely integrated as part of the analysis of industry structure (see section 4.3.4). The differentiated analysis of options for cost reductions should be documented as suggested in section 4.2.2.

Result	Result structure
Set of resources to differentiate from competitors, raise entry barriers, or increase switching costs. Degree of competitiveness of these resources.	(Annotated in II., see section 4.3.4)
Differentiated list of options for cost reduction.	(see section 4.2.2) → Structured description and figures for procurement → Structured description and figures for sales

4.3.3 Balanced Analysis

From the *Financial Perspective*, it is required to assess the approximate costs for engaging in E-commerce; this can be achieved by selecting a certain evolutionary stage and referring to the description given in section 2.1. Additionally, a listing of cost types, their amount and proportions is required. Further balancing criteria have to be related to the specific options for Internet usage, identified as part of industry structure analysis (see section 4.3.4).

Result	Result structure
Evolutionary stage, necessary investments and resources	→ Chosen initial evolutionary stage for E-commerce → Derived approximation of necessary investments and resources
Major cost drivers, cost structure	→ Listing of cost types: amount and proportions
For each option of Internet usage:	*(Annotated in II. as "B", see section 4.3.4)*
Critical mass of users necessary	→ Yes or no, approximate number of critical mass
Dependencies of Internet usage options to brand value, service level and target groups	→ Approximate degree of dependency
Changes in working processes, level of flexibility of employees, measures for flexibility improvement	→ Approximate number of changes in processes, description of changes → Assessment of adequacy of employees' flexibility
List of customer benefits for each option of Internet usage	→ Description of benefits from customer viewpoints

4.3.4 Industry Structure

Industry structure analysis aims primarily at identifying your own company's as well as competitors' strengths and weaknesses. Additionally, the results described below show options (and their evaluation) for structural change in the value chain and for new ways of communication and interaction. In the third column additionally required documentation is annotated, depicting the dependencies to the analysis of resources, costs, and balancing criteria. Since the identification and documentation of opportunities and risks is necessary at various points in the analysis, it is annotated in the same way:

"C"	Assessment of necessary initial investments (fixed costs) and variable costs.
"O/R"	Assessment of opportunities and risks.
"R"	Assessment of competitiveness of resources (see III., section 4.3.2).
"B"	Analysis of balancing criteria (see IV., section 4.3.3).

Result	Result structure	Add.
Set of potential characteristics for differentiation	List of possible differentiation characteristics → compared to those of – current and new - competitors → necessary underlying core competences (internal resources)	 → R
List of possible ways to raise entry barriers	→ List of possible ways to raise entry barriers together with underlying core competences (internal resources)	→ R → C
Incentives of suppliers for your disintermediation, customer market specific knowledge	→ List of your value adding activities and → your advantages in (gaining) customer market specific knowledge	 → R
Market overview of service providers for comparing prices or bundling of procurement products, other ways for automated price comparison, necessary investments, expected price and cost reductions	→ List of service providers for procurement market information → Description of other approaches for automated price comparison, expected cost reductions	→ C → C
Measures for raising switching costs, their expected costs and usefulness on the Internet	→ List of current measures for customer retention together with their usefulness on the Internet → List of new options for customer retention	 → C, B → O/R
Potential substitutes	→ List of current and potential substitute products, *treat them as competitors (see first item of this list on differentiation)*	
Potential new products or services, implied risks and chances.	List of potential new products or services: → Necessary competences and their current availability in the firm → Other competitors providing these products/services	→ C, B → R
Chances and Risks of an increased customer base, in particular: suitability of current cost structure	→ Cost structure (fixed and variable costs), see section 4.3.3 → Description of cost structure suitability for a (significantly) larger customer base	
List of (non core) activities, chances and risks for outsourcing these.	Listing of activities (see value chain): → Evaluation of their importance/specifity for the firm → Assessment of chances and risks for outsourcing of non-core activities	 → O/R

Potential new (downstream) markets and necessary investments, potential synergies	Identification and description of downstream markets: → Competitor analysis → Necessary resources/competences → Potential for synergies, new investments → Expected market share	→ O/R
List of complementors, degrees of dependencies, ways for cooperation	List of complementors, description for each: → Degree and type of dependency → Options for cooperation and potential contribution for further differentiation → Current cooperation with competitors	→ O/R → B
Competitors' E-commerce initiatives, potential aspects for cooperation	→ For each competitor: evolutionary stage in E-commerce, description of Internet related activities → Potential aspects for cooperation with respect to open standards, regulations (see above)	→ O/R
Groups of suppliers, target groups of customers, their requirements or expectations for communication channels	→ Description of current customer target groups and channel usage (e.g. store front, telephone) → Description of current suppliers and their channel usage (e. g. telephone, whole sale stores, e-Mail) → Customer groups: description of their suitability for and expectations of Internet usage → Suppliers: description of (planned) initiatives for Internet usage	
New options for communication. Assessment of their availability and costs for each communication partner	List of new options for communication and information sharing: → Current availability to customers → Current availability to suppliers	→ C → O/R → B

5 Conclusions

In this report, we presented a framework to help companies with the analysis of strategic options offered by the use of the Internet. The framework does not support the analysis of every possible strategy that takes advantage of the Internet. Instead, its main focus is on performing transactions deploying Internet technologies and on redesigning the internal value chain with emphasis on procurement and sales. Also, it is intended to prepare for the generic strategy ‘cost leadership’. The framework results from enhancing existing instruments for strategy analysis with specific concepts that reflect the peculiarities of E-Commerce. Its main purpose is to reduce complexity and provide guidance. It is not, however, to be misunderstood as a ‘cookbook’ for strategy analysis. Instead, the contingency of the matter demands a thorough and careful analysis in every single case. This involves an evaluation of the criteria provided by the framework: A particular criterion may be relevant in one company, while it can be neglected in another company. The documentation structure that is recommended by the framework fosters a tight integration of strategy analysis and the succeeding strategy design.

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Appendix: Key questions and results

Global environment

☑ To which extent is your industry affected by globalisation and de-regulation? Which **competitors** will additionally be on the **global market** of your Industry on the Internet?	Set of (new) competitors on the Internet
☑ Are there any 'holes' in the necessary set of **regulations** on the Internet? Could it be beneficial to cooperate with competitors to find an industry wide solution?	Set of open regulations, approaches for solving them
☑ Consumers in general have become more demanding (**buyers' markets**); to what extent does this apply to the customers in your industry? Have your competitors already set higher standards (e. g. in terms of price and service levels) rising customers' expectations?	Expectations of customers in terms of price and service levels

(Extended) Industry structure

☑ Transparent sales markets are a potential threat: In which ways can you **differentiate** yourself from competitors, in particular those on the Internet?	Set of potential characteristics for differentiation
☑ In which ways can you (re-)**raise entry barriers** for competitors on the Web? Are there certain (innovative) functionalities you could provide using proprietary software?	List of possible ways to raise entry barriers
☑ How likely are your suppliers to **overleap your value chain**? What are your advantages (e. g. your specific knowledge about your customer markets) that could help you stay in the value chain?	Incentives of suppliers for your disintermediation, customer market specific knowledge
☑ In which ways can prices be compared and demand bundled in order to **reduce procurement prices**? What is the relation of expected price reductions and the initial investments as well as regular payments (efforts) for obtaining the relevant information?	Market overview of service providers for comparing prices or bundling of procurement products, other ways for automated price comparison, necessary investments, expected price and cost reductions

☑ What are your current instruments for **retaining customers**? What are typical ways of your industry for keeping customers? Are these instruments still effective after a transition to E-Commerce? What (new) measures could you provide for raising the switching costs perceived by your customers?	Measures for raising switching costs, their expected costs and usefulness
☑ Are there – or are there likely to be – providers of products, which can serve as **substitutes** for your current products?	Potential substitutes (treat as competitors, see above)
☑ Given your company's current market position, what are the specific chances and risks for new value adding services or **new products** (product bundling) through Internet usage?	Potential new products or services, implied risks and chances.
☑ The Internet allows for reaching a much greater number of customers. Would your business benefit from an **increased customer base**? In particular, would you expect economies of scale? How is your cost structure suited to deal with increasing demand (see also section 4.2.3)?	Chances and Risks of an increased customer base, in particular: suitability of current cost structure
☑ Using Information technology and the Internet decreases transaction costs. What are the chances and risks of your company to **outsource** non core activities?	List of (non core) activities, chances and risks for outsourcing these.
☑ Which **downstream markets** would you be able to enter due to lower entry barriers? Which synergies could be taken advantage of and what are the expected costs?	Potential new markets and necessary investments, potential synergies
☑ What are the current (and potential) providers of products complementary to your products and services (**complementors**)? To which extent are they likely to affect your market share by their strategic movements? For highly dependent complementary products: in which ways could you cooperate in order to achieve sustainable competitive advantage by providing your customers with a bundle of products?	List of complementors, degrees of dependencies, ways for cooperation
☑ In which ways is the Internet deployed by your competitors for communicating with customers and/or suppliers? Could you profit from **cooperating with your competitor(s)** in order to develop necessary standards for using the Internet in your industry?	Competitors' E-commerce initiatives, potential aspects for cooperation

☑ From your customers (and suppliers) view point: what are the advantages or incentives for using the **Internet as a communication channel**? Are your current target groups likely to use the Internet? What are their specific requirements for channels of communications in general? How can these requirements be applied to the Internet?

Groups of suppliers, target groups of customers, their requirements or expectations for communication channels

☑ What are the **new options for communicating** and sharing information with your suppliers and customers? Is the technology necessary for implementing these options available to all communication partners? If not, what are the costs for acquiring and using the new technologies for each group?

New options for communication. Assessment of their availability and costs for each communication partner

(Internal) competitive resources

☑ Which **resources** can you build on in order to raise entry barriers, increase switching costs, or prevent your suppliers from overleaping your value chain? Are these resources truly competitive according to the given criteria?

Set of resources to differentiate from competitors, raise entry barriers, or increase switching costs. Degree of competitiveness of these resources.

☑ Analyse the different five activities (see above) for procurement and sales with respect to the **potential for cost reduction** through outsourcing, eliminating intermediaries, cooperation, and automation.

Differentiated list of options for cost reduction.

Balanced strategic analysis

☑ With respect to the evolutionary levels described in section 2.1 what **stage of Internet usage** do you plan to initially realize? Refer to the investments and resources necessary for implementing this stage: how do they apply to your particular company?

Evolutionary stage, necessary investments and resources

☑ For a detailed **cost analysis**: (1) Identify major cost drivers, such as management of business processes, staff, activities that could be outsourced. (2) Analyse your structure and proportions of costs, such as fixed and variable costs etc.

Major cost drivers, cost structure

Balanced assessment of individual options for Internet usage:

- ☑ Is a critical mass of users necessary for economically implementing a strategic option of Internet usage?

  Critical mass of users

- ☑ Does a particular option of using the Internet potentially affect your image, the level of service provided, or the target market segments?

  Dependencies of Internet usage options to brand value, service level and target groups

- ☑ Which changes in processes and technology usage does the implementation of an Internet usage option imply for your employees? Are particular measures necessary to improve their flexibility?

  Changes in working processes, level of flexibility of employees, measures for flexibility improvement

- ☑ Are the options for Internet usage oriented towards customer needs and requirements?

  List of customer benefits for each option of Internet usage

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